

#18



1600

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/723,722A

DATE: 02/19/2003

TIME: 10:57:39

Input Set : A:\Sub152706441US.txt

Output Set: N:\CRF4\02192003\I723722A.raw

ENTERED

4 <110> APPLICANT: Anderson, John P.
 5 Basi, Guriqbal
 6 Doane, Minh Tam
 7 Frigon, Normand
 8 John, Varghese
 9 Power, Michael
 10 Sinha, Sukanto
 11 Tatsuno, Gwen
 12 Tung, Jay
 13 Wang, Shuwen
 14 McConlogue, Lisa
 16 <120> TITLE OF INVENTION: Beta-Secretase Enzyme Compositions and
 17 Methods
 19 <130> FILE REFERENCE: 228-US-NEWC1
 21 <140> CURRENT APPLICATION NUMBER: 09/723,722A
 22 <141> CURRENT FILING DATE: 2000-11-28
 24 <150> PRIOR APPLICATION NUMBER: US 09/501,708
 25 <151> PRIOR FILING DATE: 2000-02-10
 27 <150> PRIOR APPLICATION NUMBER: 60/119,571
 28 <151> PRIOR FILING DATE: 1999-02-10
 30 <150> PRIOR APPLICATION NUMBER: 60/139,172
 31 <151> PRIOR FILING DATE: 1999-06-15
 33 <160> NUMBER OF SEQ ID NOS: 104
 35 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 37 <210> SEQ ID NO: 1
 38 <211> LENGTH: 1503
 39 <212> TYPE: DNA
 40 <213> ORGANISM: Homo sapiens
 42 <400> SEQUENCE: 1

43 atggcccaag	ccctgccctg	gctcctgctg	tggatgggag	cgggagtgt	gcctgcccac	60
44 ggcacccagc	acggcatccg	gctgcccctg	cgagcggcc	tggggggcgc	ccccctggg	120
45 ctgcggctgc	cccgggagac	cgacgaagag	cccaggagc	ccggccggag	ggcagcttt	180
46 gtggagatgg	tggacaacct	gaggggcaag	tcggggcagg	gctactacgt	ggagatgacc	240
47 gtgggcagcc	ccccgcagac	gctcaacatc	ctggtggata	caggcagcag	taactttgca	300
48 gtgggtgctg	ccccccaccc	cttcctgcat	cgctactacc	agaggcagct	gtccagcaca	360
49 taccgggacc	tccggaagg	tgtgtatgtg	ccctacaccc	agggcaagt	ggaaggggag	420
50 ctggggcacc	acctggtaag	catcccccat	ggccccaacg	tcactgtgcg	tgccaacatt	480
51 gctgccatca	ctgaatcaga	caagtctctc	atcaacggct	ccaactggga	aggcatcctg	540
52 gggctggcct	atgctgagat	tgccaggcct	gacgactccc	tggagccttt	ctttgactct	600
53 ctggtaaaagc	agacccacgt	tcccaacctc	ttctccctgc	agctttgtgg	tgctggcttc	660
54 cccctcaacc	agtctgaagt	gctggcctct	gtcggaggga	gcatgatcat	tggaggtatc	720
55 gaccactcgc	tgtacacagg	cagtctctgg	tatacaccca	tccggcggga	gtggtattat	780
56 gaggtgatca	ttgtgcgggt	ggagatcaat	ggacaggatc	tgaatatgga	ctgcaaggag	840

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```

57 tacaactatg acaagagcat tgtggacagt ggcaccacca accttcgttt gccaagaaa 900
58 gtgtttgaag ctgcagtcaa atccatcaag gcagcctcct ccacggagaa gttccctgat 960
59 ggtttctggc taggagagca gctgggtgtgc tggcaagcag gcaccacccc ttggaacatt 1020
60 ttcccagtca tctcactcta cctaattgggt gaggttacca accagtcctt ccgcatcacc 1080
61 atccttccgc agcaatacct gcggccagtg gaagatgtgg ccacgtccca agacgactgt 1140
62 tacaagtttg ccatctcaca gtcatccacg ggcactgtta tgggagctgt tatcatggag 1200
63 ggcttctacg ttgtctttga tcgggcccgaa aaacgaattg gctttgctgt cagcgcttgc 1260
64 catgtgcacg atgagttcag gacggcagcg gtggaaggcc cttttgtcac cttggacatg 1320
65 gaagactgtg gctacaacat tccacagaca gatgagtcaa ccctcatgac catagcctat 1380
66 gtcattggctg ccatctgcgc cctcttcatg ctgccactct gcctcatggg gtgtcagtgg 1440
67 cgctgcctcc gctgcctgcg ccagcagcat gatgactttg ctgatgacat ctccctgctg 1500
68 aag 1503
70 <210> SEQ ID NO: 2
71 <211> LENGTH: 501
72 <212> TYPE: PRT
73 <213> ORGANISM: Homo sapiens
75 <400> SEQUENCE: 2
76 Met Ala Gln Ala Leu Pro Trp Leu Leu Leu Trp Met Gly Ala Gly Val
77 1 5 10 15
78 Leu Pro Ala His Gly Thr Gln His Gly Ile Arg Leu Pro Leu Arg Ser
79 20 25 30
80 Gly Leu Gly Gly Ala Pro Leu Gly Leu Arg Leu Pro Arg Glu Thr Asp
81 35 40 45
82 Glu Glu Pro Glu Glu Pro Gly Arg Arg Gly Ser Phe Val Glu Met Val
83 50 55 60
84 Asp Asn Leu Arg Gly Lys Ser Gly Gln Gly Tyr Tyr Val Glu Met Thr
85 65 70 75 80
86 Val Gly Ser Pro Pro Gln Thr Leu Asn Ile Leu Val Asp Thr Gly Ser
87 85 90 95
88 Ser Asn Phe Ala Val Gly Ala Ala Pro His Pro Phe Leu His Arg Tyr
89 100 105 110
90 Tyr Gln Arg Gln Leu Ser Ser Thr Tyr Arg Asp Leu Arg Lys Gly Val
91 115 120 125
92 Tyr Val Pro Tyr Thr Gln Gly Lys Trp Glu Gly Glu Leu Gly Thr Asp
93 130 135 140
94 Leu Val Ser Ile Pro His Gly Pro Asn Val Thr Val Arg Ala Asn Ile
95 145 150 155 160
96 Ala Ala Ile Thr Glu Ser Asp Lys Phe Phe Ile Asn Gly Ser Asn Trp
97 165 170 175
98 Glu Gly Ile Leu Gly Leu Ala Tyr Ala Glu Ile Ala Arg Pro Asp Asp
99 180 185 190
100 Ser Leu Glu Pro Phe Phe Asp Ser Leu Val Lys Gln Thr His Val Pro
101 195 200 205
102 Asn Leu Phe Ser Leu Gln Leu Cys Gly Ala Gly Phe Pro Leu Asn Gln
103 210 215 220
104 Ser Glu Val Leu Ala Ser Val Gly Gly Ser Met Ile Ile Gly Gly Ile
105 225 230 235 240
106 Asp His Ser Leu Tyr Thr Gly Ser Leu Trp Tyr Thr Pro Ile Arg Arg
107 245 250 255

```

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```

108 Glu Trp Tyr Tyr Glu Val Ile Ile Val Arg Val Glu Ile Asn Gly Gln
109           260           265           270
110 Asp Leu Lys Met Asp Cys Lys Glu Tyr Asn Tyr Asp Lys Ser Ile Val
111           275           280           285
112 Asp Ser Gly Thr Thr Asn Leu Arg Leu Pro Lys Lys Val Phe Glu Ala
113           290           295           300
114 Ala Val Lys Ser Ile Lys Ala Ala Ser Ser Thr Glu Lys Phe Pro Asp
115 305           310           315           320
116 Gly Phe Trp Leu Gly Glu Gln Leu Val Cys Trp Gln Ala Gly Thr Thr
117           325           330           335
118 Pro Trp Asn Ile Phe Pro Val Ile Ser Leu Tyr Leu Met Gly Glu Val
119           340           345           350
120 Thr Asn Gln Ser Phe Arg Ile Thr Ile Leu Pro Gln Gln Tyr Leu Arg
121           355           360           365
122 Pro Val Glu Asp Val Ala Thr Ser Gln Asp Asp Cys Tyr Lys Phe Ala
123           370           375           380
124 Ile Ser Gln Ser Ser Thr Gly Thr Val Met Gly Ala Val Ile Met Glu
125 385           390           395           400
126 Gly Phe Tyr Val Val Phe Asp Arg Ala Arg Lys Arg Ile Gly Phe Ala
127           405           410           415
128 Val Ser Ala Cys His Val His Asp Glu Phe Arg Thr Ala Ala Val Glu
129           420           425           430
130 Gly Pro Phe Val Thr Leu Asp Met Glu Asp Cys Gly Tyr Asn Ile Pro
131           435           440           445
132 Gln Thr Asp Glu Ser Thr Leu Met Thr Ile Ala Tyr Val Met Ala Ala
133           450           455           460
134 Ile Cys Ala Leu Phe Met Leu Pro Leu Cys Leu Met Val Cys Gln Trp
135 465           470           475           480
136 Arg Cys Leu Arg Cys Leu Arg Gln Gln His Asp Asp Phe Ala Asp Asp
137           485           490           495
138 Ile Ser Leu Leu Lys
139           500

```

141 <210> SEQ ID NO: 3

142 <211> LENGTH: 24

143 <212> TYPE: DNA

144 <213> ORGANISM: Homo sapiens

146 <400> SEQUENCE: 3

147 gagagacgar garccwgagg agcc

24

149 <210> SEQ ID NO: 4

150 <211> LENGTH: 24

151 <212> TYPE: DNA

152 <213> ORGANISM: Artificial Sequence

154 <220> FEATURE:

155 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ

156 ID NO: 2

158 <400> SEQUENCE: 4

159 gagagacgar garccwgaag agcc

24

161 <210> SEQ ID NO: 5

162 <211> LENGTH: 24

RAW SEQUENCE LISTING

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Input Set : A:\Sub152706441US.txt

Output Set: N:\CRF4\02192003\I723722A.raw

163 <212> TYPE: DNA
164 <213> ORGANISM: Artificial Sequence
166 <220> FEATURE:
167 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
168 ID NO: 2
170 <400> SEQUENCE: 5
171 gagagacgar garccwgaag aacc 24
173 <210> SEQ ID NO: 6
174 <211> LENGTH: 24
175 <212> TYPE: DNA
176 <213> ORGANISM: Artificial Sequence
178 <220> FEATURE:
179 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
180 ID NO: 2
182 <400> SEQUENCE: 6
183 gagagacgar garccwgagg aacc 24
185 <210> SEQ ID NO: 7
186 <211> LENGTH: 23
187 <212> TYPE: DNA
188 <213> ORGANISM: Artificial Sequence
190 <220> FEATURE:
191 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
192 ID NO: 2
194 <400> SEQUENCE: 7
195 agagacgarg arccsgagga gcc 23
197 <210> SEQ ID NO: 8
198 <211> LENGTH: 23
199 <212> TYPE: DNA
200 <213> ORGANISM: Artificial Sequence
202 <220> FEATURE:
203 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
204 ID NO: 2
206 <400> SEQUENCE: 8
207 agagacgarg arccsgaaga gcc 23
209 <210> SEQ ID NO: 9
210 <211> LENGTH: 23
211 <212> TYPE: DNA
212 <213> ORGANISM: Artificial Sequence
214 <220> FEATURE:
215 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
216 ID NO: 2
218 <400> SEQUENCE: 9
219 agagacgarg arccsgaaga acc 23
221 <210> SEQ ID NO: 10
222 <211> LENGTH: 23
223 <212> TYPE: DNA
224 <213> ORGANISM: Artificial Sequence
226 <220> FEATURE:
227 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ

RAW SEQUENCE LISTING

DATE: 02/19/2003

PATENT APPLICATION: US/09/723,722A

TIME: 10:57:39

Input Set : A:\Sub152706441US.txt

Output Set: N:\CRF4\02192003\I723722A.raw

```
228      ID NO: 2
230 <400> SEQUENCE: 10
231 agagacgarg arccsgagga acc                                23
233 <210> SEQ ID NO: 11
234 <211> LENGTH: 23
235 <212> TYPE: DNA
236 <213> ORGANISM: Artificial Sequence
238 <220> FEATURE:
239 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
240      ID NO: 2
242 <400> SEQUENCE: 11
243 cgtcacagrt trtcaaccat ctc                                23
245 <210> SEQ ID NO: 12
246 <211> LENGTH: 23
247 <212> TYPE: DNA
248 <213> ORGANISM: Artificial Sequence
250 <220> FEATURE:
251 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
252      ID NO: 2
254 <400> SEQUENCE: 12
255 cgtcacagrt trtctaccat ctc                                23
257 <210> SEQ ID NO: 13
258 <211> LENGTH: 23
259 <212> TYPE: DNA
260 <213> ORGANISM: Artificial Sequence
262 <220> FEATURE:
263 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
264      ID NO: 2
266 <400> SEQUENCE: 13
267 cgtcacagrt trtccaccat ctc                                23
269 <210> SEQ ID NO: 14
270 <211> LENGTH: 23
271 <212> TYPE: DNA
272 <213> ORGANISM: Artificial Sequence
274 <220> FEATURE:
275 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
276      ID NO: 2
278 <400> SEQUENCE: 14
279 cgtcacagrt trtcgaccat ctc                                23
281 <210> SEQ ID NO: 15
282 <211> LENGTH: 23
283 <212> TYPE: DNA
284 <213> ORGANISM: Artificial Sequence
286 <220> FEATURE:
287 <223> OTHER INFORMATION: Degenerate oligonucleotide primer derived from SEQ
288      ID NO: 2
290 <400> SEQUENCE: 15
291 cgtcacagrt trtcaaccat ttc                                23
293 <210> SEQ ID NO: 16
```

RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/723,722A

DATE: 02/19/2003
TIME: 10:57:40

Input Set : A:\Sub152706441US.txt
Output Set: N:\CRF4\02192003\I723722A.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:22; N Pos. 12
Seq#:23; N Pos. 12
Seq#:24; N Pos. 12
Seq#:25; N Pos. 12
Seq#:26; N Pos. 7
Seq#:27; N Pos. 7
Seq#:28; N Pos. 3,12
Seq#:29; N Pos. 3,12
Seq#:34; N Pos. 16
Seq#:35; N Pos. 16
Seq#:36; N Pos. 16
Seq#:37; N Pos. 16
Seq#:48; N Pos. 6164,6238,6254,6255,6256,6257,6258,6259,6260,6261,6262,6263
Seq#:48; N Pos. 6264,6265,6266,6267,6268,6269,6270,6271,6272
Seq#:61; Xaa Pos. 4
Seq#:72; Xaa Pos. 10
Seq#:73; Xaa Pos. 5
Seq#:76; N Pos. 6,18,27,30,33,36,39,42,48,57
Seq#:78; Xaa Pos. 3
Seq#:81; Xaa Pos. 4

VERIFICATION SUMMARY

DATE: 02/19/2003

PATENT APPLICATION: US/09/723,722A

TIME: 10:57:40

Input Set : A:\Sub152706441US.txt

Output Set: N:\CRF4\02192003\I723722A.raw

L:379 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:22 after pos.:0
L:395 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:23 after pos.:0
L:411 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:24 after pos.:0
L:427 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:25 after pos.:0
L:443 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:26 after pos.:0
L:459 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:27 after pos.:0
L:475 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:28 after pos.:0
L:491 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29 after pos.:0
L:551 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:34 after pos.:0
L:567 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:35 after pos.:0
L:583 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:36 after pos.:0
L:599 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:37 after pos.:0
L:954 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:48 after pos.:6120
M:341 Repeated in SeqNo=48
L:1469 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:61 after pos.:0
L:1961 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:72 after pos.:0
L:1978 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:73 after pos.:0
L:2106 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:76 after pos.:0
L:2134 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:78 after pos.:0
L:2177 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:81 after pos.:0

STATISTICS SUMMARY

DATE: 02/19/2003

PATENT APPLICATION: US/09/723,722A

TIME: 10:57:40

Input Set : A:\Sub152706441US.txt

Output Set: N:\CRF4\02192003\I723722A.raw

Application Serial Number: US/09/723,722A

Alpha or Numeric or Xml: Numeric

Application Class:

Application File Date: 11-28-2000

Art Unit: 1600

Software Application: FastSEQ

Total Number of Sequences: 104

Total Nucleotides: 23724

Total Amino Acids: 6984

Number of Errors: 0

Number of Warnings: 21

Number of Corrections: 0

MESSAGE SUMMARY

341 W: 21 ((46) "n" or "Xaa" used)